

In the Claims:

B1 1. (Twice Amended) A recombinant pox virus capable of expressing in a host an oncogene or proto-oncogene product encoded by a gene of cellular origin which induces an anti-tumor immune response in the host.

B2 8. (Twice Amended) A recombinant vaccinia virus containing, in a region of the viral genome non-essential for replication of the virus, one or more foreign oncogenes or proto-oncogenes encoding DNA sequences of cellular origin which encode an oncogene or proto-oncogene product which induces an anti-tumor immune response in a host, the sequence or sequences being under control of a vaccinia promoter.

B3 10. (Twice Amended) A recombinant vaccinia virus of Claim 8, wherein the foreign oncogene [is] encodes the neu, ros, trk or kit gene product or immunogenic portions thereof.

B4 12. (Twice Amended) A recombinant vaccinia virus of Claim 8, wherein the oncogene or proto-oncogene product is [an altered] a mutated form of the growth factor receptor molecule.

B5 Sub 22,1 15. (Twice Amended) A method of immunizing against an oncogene or proto-oncogene product encoded by a gene of cellular origin comprising the steps of inoculating an individual afflicted with a tumor which

B5
Amended July 11

expresses the oncogene or proto-oncogene product with a recombinant pox virus [capable of expressing] which expresses the cellular oncogene or proto-oncogene product.

B6

19. (Twice Amended) A method of Claim 15, wherein the oncogene product, or an immunogenic portion thereof, is encoded by the neu, ros, trk or kit gene [or immunogenic portions thereof].

B7

22. (Twice Amended) A method of immunizing an individual against an oncogene or proto-oncogene product encoded by a gene of cellular origin, comprising inoculating the individual afflicted with a tumor bearing the product with an effective amount of a recombinant vaccinia virus [capable of expressing] which expresses the oncogene or proto-oncogene.

23. (Twice Amended) A method of producing an oncogene or proto-oncogene product encoded by a gene of cellular origin, comprising the steps of:

- a. infecting cells with a recombinant pox virus capable of expressing the oncogene or proto-oncogene product which induces an anti-tumor immune response in a host;
- b. culturing the cells under conditions which allow the virus to replicate and to express the oncogene or proto-oncogene product; and
- c. isolating the oncogene or proto-oncogene product from the cells.

- B8
27. (Twice Amended) A vector for recombination with a pox virus and for incorporation of a DNA sequence encoding an oncogene or proto-oncogene product encoded by a gene of cellular origin, comprising:
- a. a prokaryotic origin replication;
 - b. a pox viral promoter linked to;
 - c. a DNA sequence located downstream of the pox viral promoter, encoding a cellular oncogene or proto-oncogene product which induces an anti-tumor immune response in a host under the direction of the pox viral promoter; and
 - d. DNA sequences of pox virus flanking the promoter and the DNA sequence, the DNA sequences being sufficiently homologous to a region of the pox viral genome so that the promoter and the DNA sequence are integrated into the viral genome at a site nonessential for replication of the virus.

- B9
30. (Twice Amended) A vector of Claim 29, wherein the DNA sequence [for] encoding the oncogene product, or an immunogenic portion of the oncogene product, is selected from the group consisting of the neu gene, the ros gene, the trk gene, the kit gene, or the c-erbB gene [or immunogenic portions thereof].

- B10
32. (Amended) A recombinant pox virus of Claim 1, wherein the oncogene or proto-oncogene product [is] encodes a [protein] transmembrane tyrosine kinase, or an immunogenic portion thereof.